Mathematics & Statistics

Arts & Science Part 1

STANDARD XII
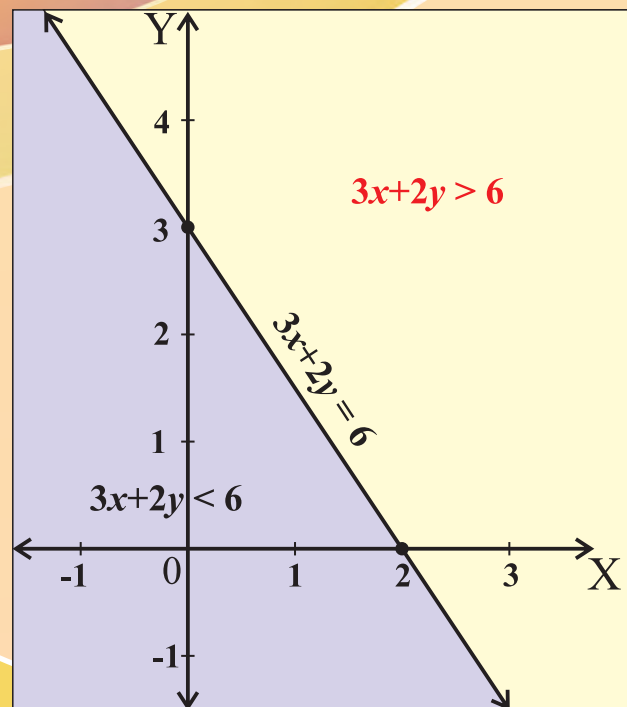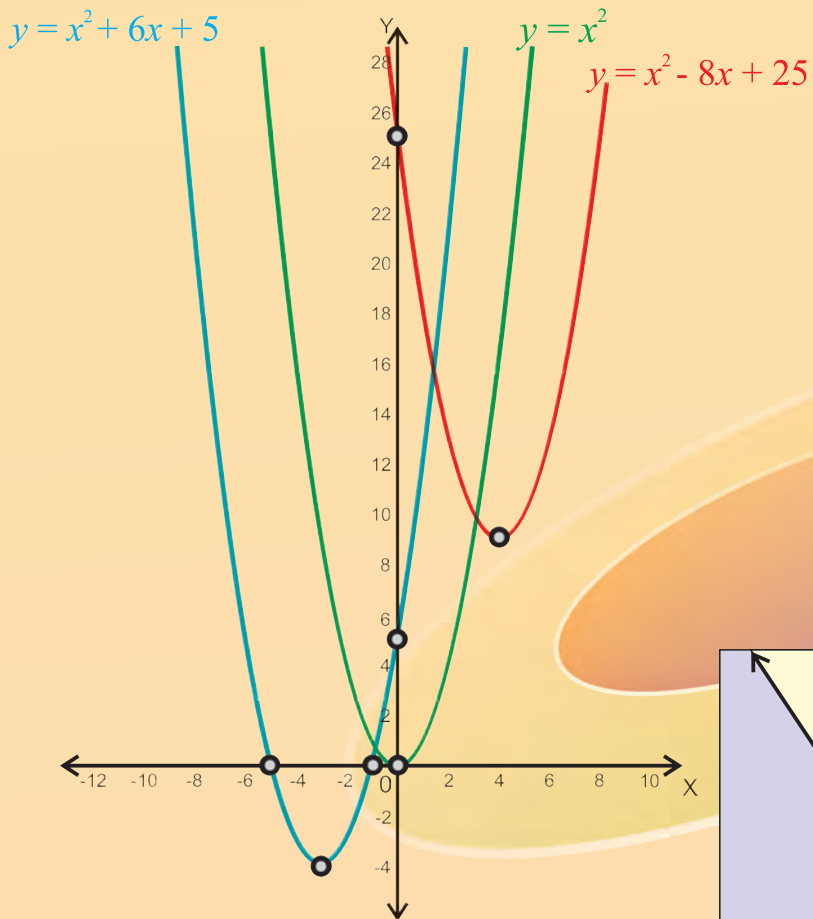
$y = x^2 + 6x + 5$

$y = x^2$

$y = x^2 - 8x + 25$

$3x+2y > 6$

$3x+2y = 6$

$3x+2y < 6$

Mathematics and Statistics
(Arts and Science)

Part - I

STANDARD - XII

Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. - 411 004

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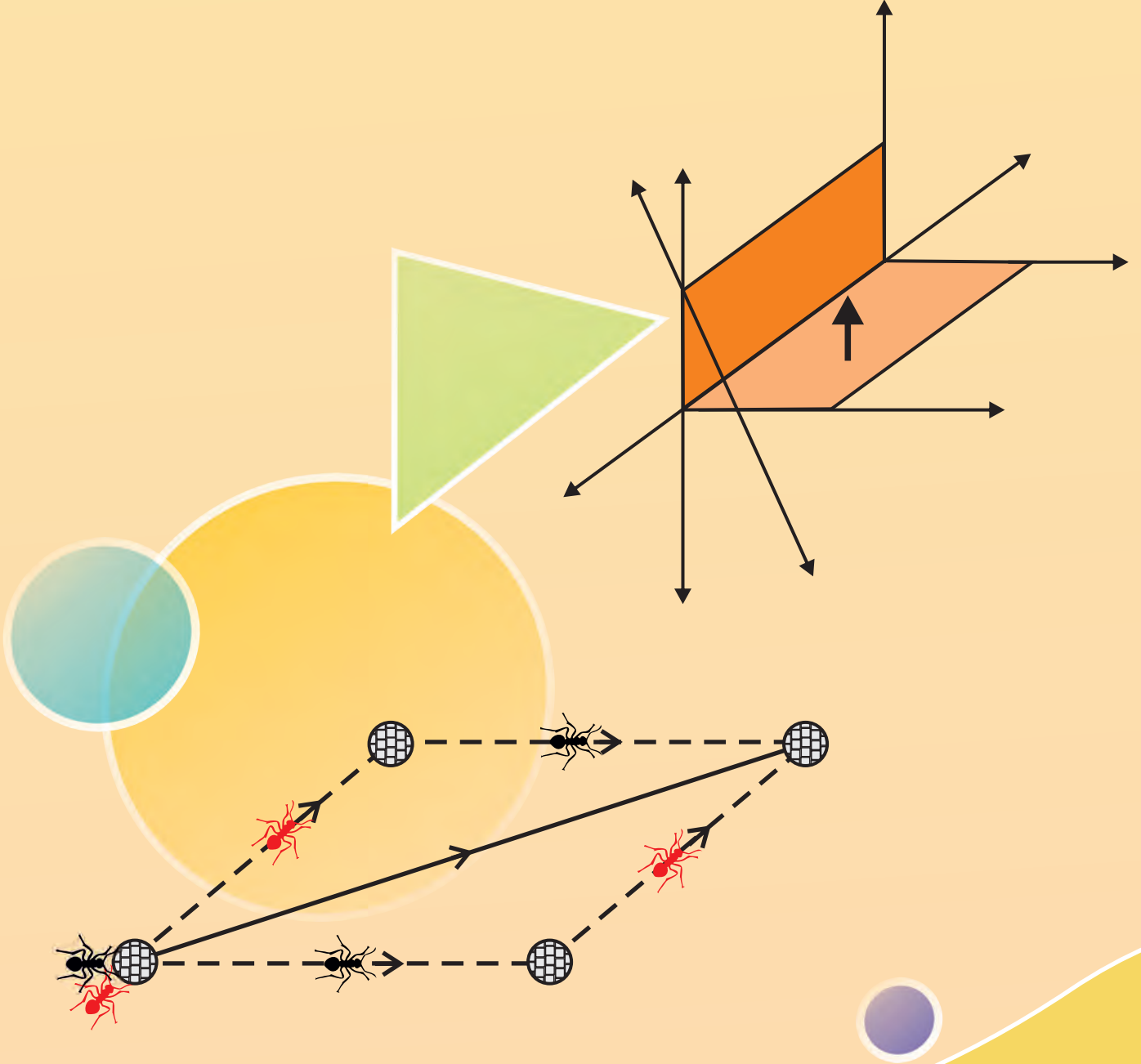
Mathematics and Statistics Std. XII Part - I
Competency Statement

Sr.No.	Area	Topic	Competency Statement
1.	Mathematical Logic	Mathematical Logic	The student will be able to • Identify statement in logic and truth value of it. • Combine two or more statements • Construct the truth table and examine logical equivalence of statement patterns • Find dual and negation of statement pattern • Study the applications of logic to switching circuits.
2.	Matrices	Matrices	• Identify orders and types of matrices • Perform basic algebraic operations on matrices. • Find the inverse of a matrix using elementary transformation and adjoint method • Solve the system of linear equations using matrices.
3.	Trigonometric Functions	Trigonometric Equations Solution of a triangle Inverse trigonometric function	• Understand and write trigonometric equation • Find the principal and general solution of a trigonometric equation. • Solve triangle by using sine rule, cosine rule and projection rule and find area of a triangle. • Understand inverse trigonometric functions with domain and range.
4.	Pair of straight lines	Pair of straight lines	• Write and interpret the combined equation of two straight lines in plane. • Find the point of intersection of two lines and calculate the acute angle between them • Study the general second degree equation in x and y with reference to homogeneous part of it

5.	Vectors	Vectors	• Understand scalars and vectors and algebra of vectors. • Write vectors of 2 or 3 dimensions understand the scalar and vector products • Study applications of vectors to area of triangle. • Interprete scalar triple product and its applications. • Direction ratios and direction cosines of a vector
6.	Line and Plane	Line and Plane	• Find different forms of equation of line • Find angle between two intersecting planes • Find the angle between a line and a plane • Find condition for perpendicularity and parallelness of planes • Calculate distance of a point from a plane • Find equation of a plane in different forms • Find angle between two intersecting planes • Find the angle between a line and a plane
7.	Linear programming Problem	Linear programming Problem	• Understand linear equations in one and two variables. • Find graphical solution of linear inequation. • Understand meaning and formulation of L.P.P. • Find solution of L.P.P. by graphical methods.

INDEX

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